

METHOD AND APPARATUS FOR GENERATING N-ORDER COMPENSATED TEMPERATURE INDEPENDENT REFERENCE VOLTAGE

Abstract

A reference voltage generator includes a plurality of signal generators for producing $N+1$ signals respectively corresponding to $N+1$ temperature dependent characteristics, a combining module coupled to the signal generators for combining the $N+1$ signals to form a combined signal, and a signal to voltage converter coupled to the combining module for generating a compensated reference voltage according to the combined signal. The signal generators include $N+1$ devices having p-n junctions and each device has a specific temperature dependent characteristic corresponding to the voltage across a p-n junction, such as the base-emitter voltage of a transistor. By scaling the $N+1$ signals, a reference voltage at a predetermined value is generated and has N^{th} order temperature compensation.